

KDF-VB

Технические характеристики

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KDF-VB

Duplex filter
with flanged butterfly valves

PN	10–64
DN	65–1.000
ANSI	2½–40"
JIS	65–1.000
GOST	65–1.000

Application areas

The KDF-VB duplex filter can be installed in pressure and in suction line and is versatile for coarse and fine filtration. It is characterized by continuous operation during the cleaning phase. The filter combines so-called housing sizes (GR) with various nominal flange connection widths (DN). The filter unit can be easily switched by a specially designed lever switch.

The KDF-VB has a combined cover and can also be delivered with bolts and nuts as well as with a quick release clamp (medium-dependent – risk analysis required). Subsequent on-site retrofitting is also possible. A danger analysis has to be performed before start up acc. PED EN 2014/68/EU or applicable codes and standards.

Brief description and function

The duplex filter, comprises two identical single filters, connected via a valve-switching device with butterfly valves which can be switched to only one filter body or can be operated in parallel. Medium to be filtered enters the filter basket from the top and flows through the insert inside out. Dirt thus remains in the filter element.

As a special version, the filter is also available with star pleated strainer inserts (changed inflow of In- and Outlet).

Notice:

The compatibility between medium and vessel or sealing material is the responsibility of the operator.

The design of the pressure vessel is based on a quasi-static operation (load cycle number ≤ 1000 according to AD 2000 Merkblatt S1, section 1.4). Max. Differential pressure inlet - outlet 1 bar.

Safety instructions

Filters with clamp closure are not suitable for the filtration of hazardous media (e.g. toxic, inflammable or caustic). In such cases, bolts and nuts must be selected as closures. Generally, use of filter with switching valve must be checked for hazardous media. The use of KDF-VB filters for gases requires a review by the manufacturer.

Check the filter for intended operation prior to usage. Conformity assessment as per PED 2014/68/EU must be done for changes in operating conditions or the media (kindly contact us for the same or run a risk analysis with conformity assessment).

Commissioning

- The ball valve of the pressure equalization line between the filter bodies must be opened prior to commissioning.
- Check whether all bolts and locks have been tightened properly.
- Check the position of the switching lever. Lever points at the filter body in operation (see pict. 2).
- Fill the filter by slowly opening the shutt off valve to avoid water hammer.
- Venting: The venting device fitted in the housing of each individual filter must be kept open until fluid escapes. The filter is ready-to-operate after venting the single filter body.
- Check whether the ball valve of the pressure equalization line between the filter bodies is closed after commissioning (see pict. 3).

Note:

For rubberlined units and other inserted plugs. Always counter hold with appropriate tool (open end wrench) when loosening the plug in order to avoid damage to vessel body and lining by over torque force to plug on filter vessel. Follow documentation instructions (GA drawing) ect.

Operation

Caution: Since it is a pressure vessel, it is important to ensure that the filter is without pressure prior to beginning of maintenance.

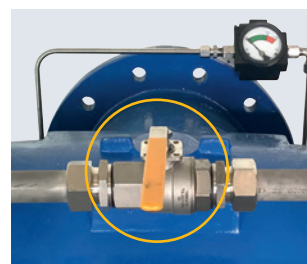
1. As soon as one filter side is dirty (increasing differential pressure on the indicator or decreasing operating pressure in the system), the clean filter side is put into operation by gradual switching.
2. **Important:** The pressure equalization line must be opened before switching. If this instruction is not followed, switching unit can get damaged.
3. Switching process: Unlock the safety bolt. Afterwards use the lever to actuate the switching slowly and switch over to other filter side. Lock the safety bolt (see pict. 4).
4. Close the pressure equalization line.



Pict. 1 – KDF-V
Stainless steel



Pict. 2 – KDF-VB
Right-hand side in operation



Pict. 3 – KDF-VB
Pressure equalization closed



Pict. 4 – KDF-VB
Safety bolt

5. Proceed with cleaning (removal of filter element) only after opening the venting device slowly and only after releasing the pressure from the filter body which shall be cleaned (pressure equalization with atmosphere pressure). The cover can be removed. Check if the switch has closed the filter body properly and that there is no leakage. In case of leakage the process has to be stopped and the filter must be isolated via IN/OUT shut off valves.
6. After opening the drain device and draining the remaining fluid from the filter side to be cleaned the strainer insert can be pulled upward and out of the filter housing for cleaning.

Caution: note maximum differential pressure of the filter (standard $D_p = 1 \text{ bar}$)

Note:

For rubberlined units and other inserted plugs. Always counter hold with appropriate tool (open end wrench) when loosening the plug in order to avoid damage to vessel body and lining by over torque force to plug on filter vessel. Follow documentation instructions (GA drawing) ect.

Important information for switchover

For media having a corrosive effect on the material of the filter, switching must be actuated regularly (2–3 times) per month.

Material/housing

DIN EN GJS-500-7 / (GGG-50/ASTM 80-55-06)
alternatively annealed GJS-400-18/(GGG 40.3)

Alternative materials

Filters are alternatively available with autoclave rubber lining, in bronze, or in stainless steel SS316Ti or SS316, and many other materials for the disc of the butterfly valves like duplex SS or aluminium bronze.

- RG 10 G-CuSn(10)5
- Stainless steel
- Steel for example PGH 284, St 37.5 and others acc. ASTM

Cleaning

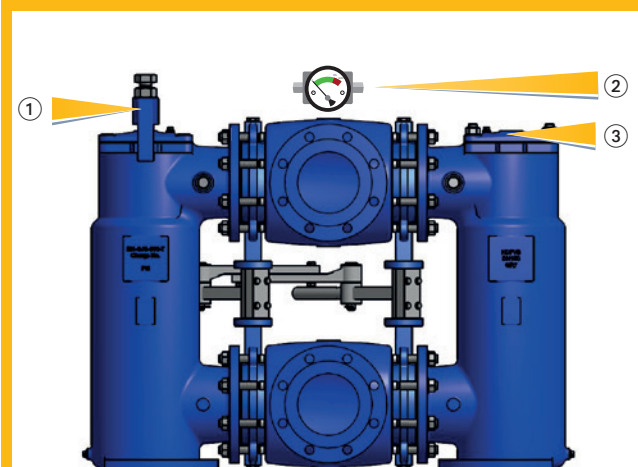
1. The filter side to be cleaned must be depressurized (open vent carefully after switching over to the other filter side until liquid escapes).
2. Then lift the cover of the filter side to be cleaned by loosening the clamp or the bolts and nuts.
3. Drain the filter via the drain device to a level that is at least below the strainer support.
4. Pull the strainer insert upward and out of the filter housing. The strainer can now be cleaned by careful blowing it out or blasting it with compressed air, steam, or water. If necessary the strainer must be soaked and cleaned in a suitable cleaning agent. In some circumstances optimum cleaning is achieved by means of ultrasonic bath. For all cleaning types ensure that the filter mesh is not damaged.
5. Check the seals for wear during assembly, replace if necessary.

Information: Do not leave opened filters unattended and if required, keep an already cleaned reserve filter element ready for replacement.

Note:

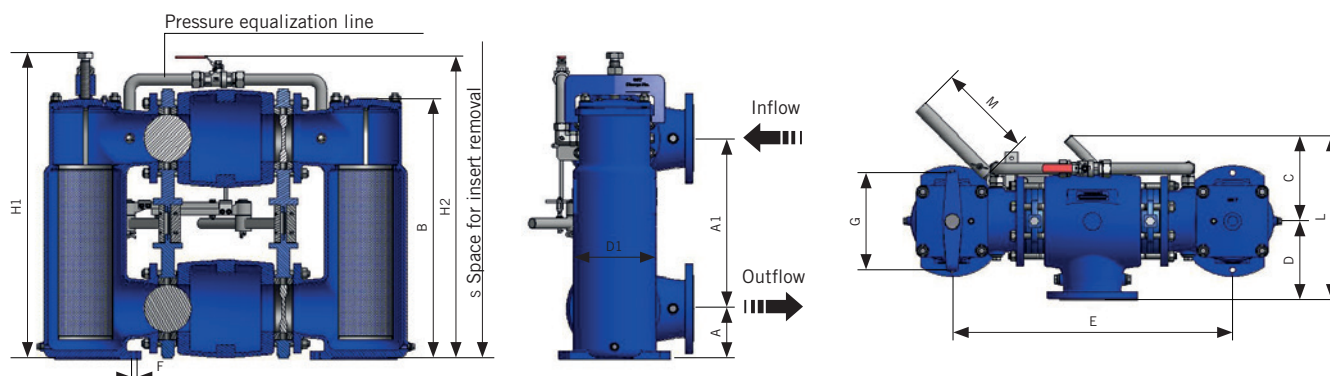
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KDF-VB options



- ① Cover with clamp
- ② Option Differential pressure indicator
- ③ Cover with bolts and nuts

Technical data and dimensions



Housing	Nominal flange	Vessel design pressure		Ø D1	A	A1	B	C	D	E	F	G
Size	DN	Clamp	Bolts								Ø	Pitch
	mm	bar	bar	mm	mm	mm	mm	mm	mm	mm	mm	mm
6	65	10	16	189	160	455	767	235	250	718	18	230
	80	10	16	189	160	455	767	235	250	718	18	230
	100	10	16	189	160	455	767	235	250	718	18	230
	125	10	16	189	160	455	767	235	250	718	18	230
7	100	6	10	262	160	540	840	260	250	889	18	290
	125	6	10	262	160	540	840	260	250	889	18	290
	150	6	10	262	160	540	840	260	250	889	18	290
8	150	6	10	325	280	620	1.037	268	362	1.133	18	375
	200	6	10	325	280	620	1.037	268	362	1.133	18	375
	250	6	10	325	280	620	1.037	268	362	1.133	18	375
	250											
10	300						On request					
	350											
11	400–1.000						On request					

Housing	Nominal flange	S	H1	H2	L	M	Flow rate	Volume	Filter surface area			Weight
Size	DN	Strainer removal height	Height with clamp	Height with bolts	Overall length	Lever length	for 2,5 m/s		Basket strainer	Ring strainer	Star pleated strainer**	
	mm	mm	mm	mm	mm	mm	m³/h	L	cm²	cm²	cm²	kg
6	65	1.500	884	910	486	700	30	85	2.900	4.300	7.829**	180
	80	1.500	884	910	486	700	45	85	2.900	4.300	7.829**	180
	100	1.500	884	910	486	700	70	85	2.900	4.300	7.829**	180
	125	1.500	884	910	486	700	77	85	2.900	4.300	7.829**	180
7	100	1.550	1.150	1.000	510	500	70	105	3.030	4.370	–	385
	125	1.550	1.150	1.000	510	500	110	105	3.030	4.370	–	387
	150	1.550	1.150	1.000	510	500	160	105	3.030	4.370	–	393
8	150	2.000	1.400	1.250	642	500	160	205	4.830	5.780	–	555
	200	2.000	1.400	1.250	642	500	280	205	4.830	5.780	–	560
	250	2.000	1.400	1.250	642	500	440	205	4.830	5.780	–	567
10	250						On request					
	300											
	350											
11	400–1.000						On request					

Dimensions only for information – certified dimensions in approved Krone Filter Solutions installation drawing. Dimensions for welded filters differ.

*Modification possible by means of larger filter pots. ** Star pleated strainer inserts can only be used with GR6 KDF-VB filters

Technical data

Technical data		
	Standard version	Special version and/or additional features
Filter element	Basket strainer insert	Ring type strainer, cartridges, slot wedge wire, star pleated strainer, multi mantle element
Filter mesh	10–1000 µm: Stainless steel mesh, 1,5–10 mm perforated plate with round perforation	5 µm, square perforation, braid, cartridges, pleated mesh
Filter insert dp pressure	Allowable differential pressure filter insert 1 bar	Higher allowable differential pressure for insert possible (design modification)
Filter cover	Bolts and nuts	GR 6–GR 8 clamp. Housing with clamp already predrilled for stud bolts – modification by customer possible.
Venting device	Screw	Ball valve/Flange
Draining device	Screw	Ball valve/Flange
Connection	Flange as per EN 1092-1 11B Flange position: Offset in height on same side or opposite	ANSI, JIS, as per customer specification, GOST
Materials		
Housing and cover	DIN EN GJS-500-7/(GGG-50/ASTM 80-55-06)	RG 5/10/G-CuSn(10)5ZnPb GGG-40.3/EN GJS 40-18 1.4571/316Ti steel 1.4404/316L steel
Cover seal	NBR	FPM, EPDM, PTFE
Perforated plate/mesh	SS316, SS304	SS316Ti, SS304, SS316L, Alloys, Titanium
Butterfly valves	GGG-40/1.4408/EPDM	Disc in Duplex SS, Titanium, Aluminium bronze, as per customer specification
Extras		
Additional filter	–	Magnetic filter element
Heater	–	Customized heating connection
Zinc protection	–	For sea water filter
Differential pressure indicator	–	Optical, with electrical contacts
Body/Cover Surface treatment		
Internal	Anti-corrosion primer or untreated	Anticorrosion oil, epoxy resin coating, rubber lining chemonit 33
External	Epoxy paint RAL 5010	RAL as per specification
Design/Certification		
	Declaration of Conformity – Lloyds Register certified foundry acc. to DGRL 2014/68/ EU, LR TA and LR design appraisal	3.1. Certificate, DGRL/TÜV, GL, LS, DNV, ABS, LR TA type approval, TR TF/TR CU Certificates (EAC) or on request

Accessories

We produce and deliver additional design and material variants on request.
We solicit your request.



Differential pressure indicator



KDF-V PN 64/DN 150



KDF-V DN 500/20"

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